UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,936	12/15/2003	Martin J. Dowling	I-2-0402US	3730

24374 7590 11/28/2006

VOLPE AND KOENIG, P.C.
DEPT. ICC
UNITED PLAZA, SUITE 1600
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

EXAMINER	
NGUYEN, TU X	

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/735,936	DOWLING, MARTIN J.	
	Examiner	Art Unit	
	Tu X. Nguyen	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-15* is/are pending in the application.

4a) Of the above claim(s) *1-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/15/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Examiner comments

Claims 1-9 have been cancelled.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 10 and 13, are rejected under 35 U.S.C. 102(e) as being anticipated by Ishiguro et al. (US Pub.2003/0128679).

Regarding claims 10 and 13, Hiramatsu disclose a first wireless transmit/receive unit (WTRU) capable of canceling interference from a second WTRU in a neighboring cell, the first WTRU comprising:

an antenna (see fig.2, element 7a) for receiving signals including a first signal of the first WTRU (see fig.3, element S1), a second signal of the second WTRU (see fig.3, element S3, par.058, "interference foreign cell signal" corresponds to "second signal") and a third signal indicating a code of the second signal (see fig.3, element S4);

a signal receiver for determining the second signal code using the received third signal (see par.064, lines 6-7);

an interference canceller for canceling the second signal from the received signals, producing an interference canceled signal (see par.064, lines 13-14); and a data detection device having an input configured to receive the interference canceled signal for detecting data of the first signal (see par.064, lines 15-19).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-12 and 14-15, are rejected under 35 U.S.C. 103(a) as being obvious over Ishiguro et al. in view of Frank et al. (US Pub. 2003/0035469).

Regarding claims 11 and 14, Ishiguro et al. fail to disclose a second code generation device for producing a code of the second signal; a weighting device, coupled to a root mean squares (RMS) measuring device, for weighting the produced code; a subtractor for subtracting the weighted produced code from the received signals, producing a subtracted signal; the RMS measuring device for measuring a RMS of the subtracted signal; and a data detector having an input configured to receive the subtracted signal for detecting data of the first signal.

In the related art, interference cancellation apparatus, Frank et al. disclose a second code generation device for producing a code of the second signal; a weighting device, coupled to a root mean squares (RMS) measuring device, for weighting the produced code; a subtractor for subtracting the weighted produced code from the received signals, producing a subtracted signal; the RMS measuring device for measuring a RMS of the subtracted signal; and a data detector having an input configured to receive the subtracted signal for detecting data of the first signal (see par.051). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ishiguro et al. with the above teaching of Frank et al. in order to provide the MMSE equalization with parallel interference cancellation to improved performance.

Regarding claims 12 and 15, Ishiguro et al. disclose a joint detector (see par.061); however, Ishiguro et al. fail to disclose a second code generation device for producing a code of the second signal; a weighting device, coupled to a root mean squares (RMS) measuring device, for weighting the produced code; a subtractor for subtracting the weighted produced code from the received signals, producing a subtracted signal; the RMS measuring device for measuring a RMS of the subtracted signal; and a data detector having an input configured to receive the subtracted signal for detecting data of the first signal.

In the related art, interference cancellation apparatus, Frank et al. disclose a second code generation device for producing a code of the second signal; a weighting device, coupled to a root mean squares (RMS) measuring device, for weighting the produced code; a subtractor for subtracting the weighted produced code from the received signals, producing a subtracted signal; the RMS measuring device for measuring a RMS of the subtracted signal;

and a data detector having an input configured to receive the subtracted signal for detecting data of the first signal (see par.051). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ishiguro et al. with the above teaching of Frank et al. in order to provide the MMSE equalization with parallel interference cancellation to improved performance.

12. The first WTRU of claim 10 wherein the interference canceller includes; a second WTRU joint detector for detecting data of the second signal using the second code; an interference reconstruction device for producing a contribution of the second signal to the received signals; a subtractor for subtracting the second signal contribution from the received signals, producing a subtracted signal; and a joint detector having an input configured to receive the subtracted signal and for detecting data of the first signal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed Tu Nguyen whose telephone number is 571-272-7883.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

11/25/06